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Spore formation among the Fungi imperfecti.—LEININGER¹¹ studying the factors affecting the reproduction of *Pestalozzia Palmarum*, finds that this fungus has four modes of spore formation, whose manifestation depends upon the conditions under which the fungus is growing. Spore formation can always be induced by withdrawal of nutriment; the mode of spore formation, however, depends largely on the nature of the medium in which the fungus is growing or has been grown previous to spore formation. On submersed mycelia or on mycelia which are submersed after having grown on other media, true pycnidia are formed. Mycelia which have grown in liquid media also produce pycnidia when placed in a damp atmosphere. Mycelia growing in air on the surface of liquids, or on solid substrata, produce pseudopycnidia, i.e., fruiting organs with a pseudo-parenchymatous base, but whose upper part is composed of a thin layer of interwoven hyphae. Sori, which are never covered, and solitary spores are produced only on liquid media. Some organic substances seem to favor the production of one or the other of the last two modes of reproduction. The author suggests that the polymorphism of such forms necessitates a reform in the classification of the *Fungi imperfecti* on a physiological basis.

Another paper dealing with the instability of definite modes of reproduction among the *Fungi imperfecti* is that by VOGES,¹² who makes the difference in the spore-producing structures of two forms of *Hendersonia* a basis for a discussion of the validity of the characteristics used in the classification of this group. The two species discussed are *H. piricola*, a leaf-inhabiting form on the leaves of pear trees, and *H. sarmentorum*, which occurs on the dead stems of many plants. In *H. piricola* the spores are formed in the epidermal cells and become exposed by the breaking of the cuticle. They are borne in sori, therefore, with no vestige of a perithecium. In *H. sarmentorum*, however, a well-developed perithecium is formed. These two forms, although related in other characteristics, would thus fall into entirely different orders of the *Fungi imperfecti*, and therefore the author regards the presence or absence of the perithecium as a characteristic of subordinate importance. The form of the spores and the number of cells they contain he likewise regards as of minor importance.

Such variations are known to occur very frequently among the *Fungi imperfecti*, particularly in cultures of the more complex forms. As the classification of this group is one of convenience and does not involve a taxonomic problem in the phylogenetic sense, it would be an error to lay great stress on such deviations which occur under special conditions or in a few forms, and to subordinate to them such conspicuous characteristics as the presence of a perithecium, which on the whole serve well for the distinctions of large groups of forms as they occur in nature.—H. HASSELBRING.

¹¹ LEININGER, H., Zur Morphologie und Physiologie der Fortpflanzung von *Pestalozzia Palmarum* Cooke. *Centralb. Bakt.* II. 29:3-35. figs. 15. 1911.

¹² VOGES, E., Ueber die Pilzgattung *Hendersonia* Berk. *Bot. Zeit.* 68:87-100. figs. 10. 1910.